

REMARKS

Claims 1-3, 7 and 8 are pending. No new matter has been added.

RCE

Applicants submit herewith a Request for Continuing Examination (RCE) in order to ensure entry of the Amendment, which is being filed in response to a final Office Action.

Examiner Interview

Applicants extend their appreciation to the Examiner and the Examiner's Supervisor, Huy D. Vu, for granting a Personal Interview with the undersigned and Mr. Hiroshi Kawano who is a member of the company to which the present invention is assigned, Hitachi, Ltd. In the interview, proposed amendments to claim 1 were discussed. Also, the differences between the invention as set forth in the proposed amendment to claim 1 and the Block reference were discussed. It was agreed that the proposed amendment to claim 1 would overcome the current rejection of claim of the claim.

Applicants have amended claim 1 and independent claim 8 to include the changes discussed in the interview. Also corresponding claim amendments have been made to dependent claims 2, 3 and 7. In particular, Applicants have amended the independent claims to include that the switch is a virtualization switch which is connected with a plurality of storage units and a computer through a plurality of communication paths. Each of claims 1 and 8 has also been amended to include a management table having information about a virtual logical unit number (virtual LUN) of a virtual volume, a LUN, first and second communication paths and a data transfer starting information of a command in combination with the virtual LUN being used to virtually represent a position of the LUN in the storage unit for the computer and the relaying of a command, sent from the computer to the virtual LUN, to the LUN, with the first communication path being used if trouble does not occur, and the second communication path being used if trouble occurs in the first communication path. Further, claims 1 and 8 have been amended to set forth that a command for data transfer that is received from the computer to the virtual volume and the identifier for identifying the command is recorded. The command is transferred to the LUN and the storage units through the first communication path based on

the management table. In response to detecting trouble occurring in the first communication path, a starting of the data transfer upon the command is recorded with the recorded identifier, and if a starting of the data transfer has been recorded, a frame for noticing an error of the received command is transmitted to the computer. Further, if starting of the data transfer has not been recorded, a new transfer upon said command is created by using said LUN corresponding to said virtual LUN without transmitting the frame for noticing the error and the command is transferred to the LUN and the storage unit through a second communication path.

Claim Rejections

Claims 1 and 2 stand rejected under 35 U.S.C. §102(e) as being anticipated by Block in view of De Nijs and Uchida. Claim 3 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Block in view of De Nijs and Uchida and further in view of Espy. Claim 7 stands rejected under 35 U.S.C. §103(a) as being unpatentable over the Block, De Nijs and Uchida combination, further in view of Ma. Claim 8 stand rejected as being anticipated by Block in view of De Nijs under 35 U.S.C. §102(e). Reconsideration of the rejections is requested for the following reasons.

Block does not disclose or suggest the invention as claimed in amended claims 1 and 8, whether considered in combination with De Nijs and Uchida. According to Block, a cluster data port is able to selectively and dynamically choose among a plurality of connection paths 22 between a source node 12 and any of nodes 14, 16, and is able to selectively and dynamically switch over data flow from primary target node 14 to a backup primary node 16, effectively substituting the backup target node 16 as the new primary target node. However, Block does not disclose, in response to detecting trouble occurring in a first communication path, recording a starting of the data transfer upon a command with a recorded identifier, and if a starting of the data transfer has been recorded, transmitting a frame for noticing an error of the received command to the computer. Further, Block does not disclose, if starting of the data transfer has not been recorded, creating a new transfer upon said command by using the LUN corresponding to the virtual LUN without transmitting the frame for noticing the error and transferring the command to the LUN and the storage unit through a second communication path.

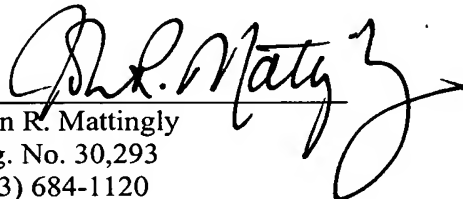
Although Block is combined with De Nijs and Uchida to reject claims 1 and 2, and with only De Nijs to reject claim 8, the secondary references do not make up for the above noted deficiencies in Block. Accordingly, claims 1, 2 and 8 are patentable over Block, De Nijs and Uchida. Claims 3 and 7 are also patentable over the Block, De Nijs and Uchida combination, whether or not the Epsy and Ma references are relied upon since these references are similarly deficient as De Nijs and Uchida in providing the necessary disclosure to be combined with Block in rendering the claims obvious to one having ordinary skill in the art. Epsy is relied upon for disclosing dealing with a cut-out of a physical connection in a network. Ma is relied upon for disclosing a virtual memory in a switch. Accordingly, claims 3 and 7 are not obvious under 35 U.S.C. § 103(a) and the rejections should be withdrawn.

Conclusion

In view of the foregoing, Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C.

By 
John R. Mattingly
Reg. No. 30,293
(703) 684-1120

Date: January 24, 2006